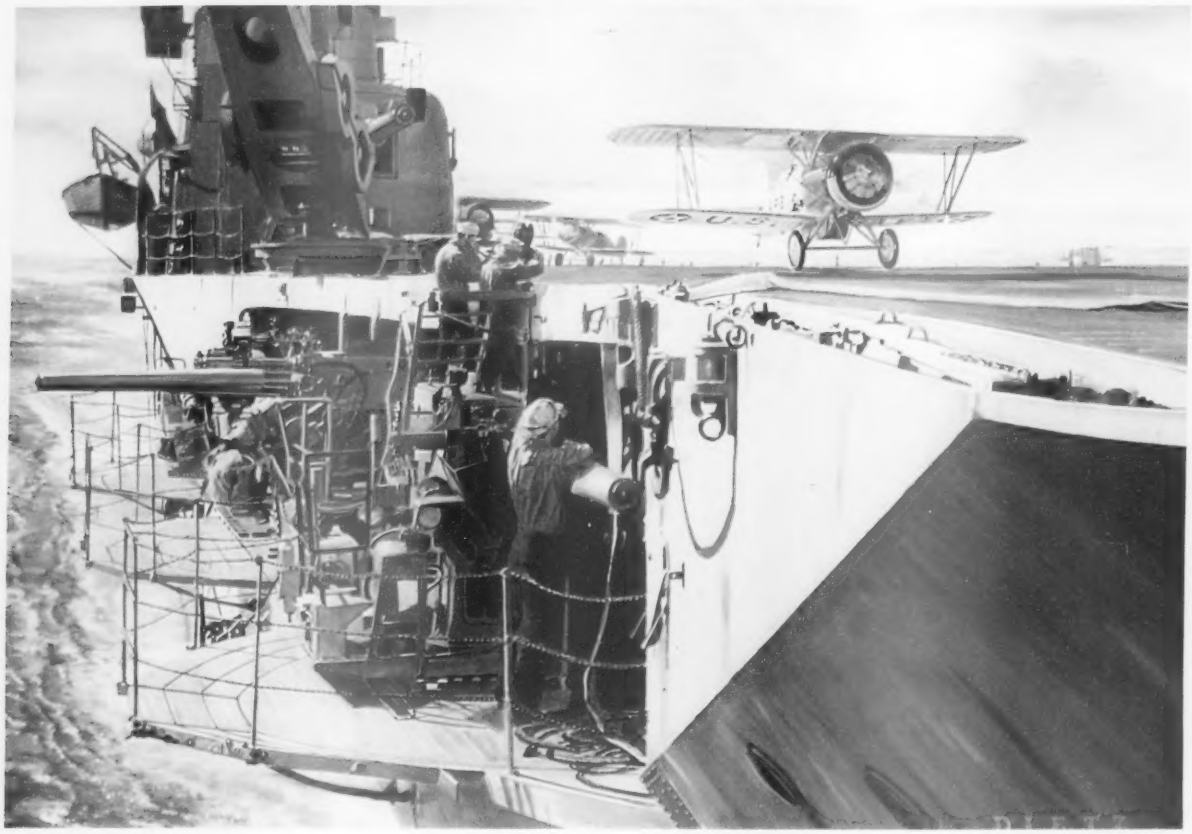
May 1994

approach



"Felix Leaves Sara," by Jim Dietz. An F4B-4 of VF-6 launches from USS *Saratoga* (CV-3), using a flywheel-type catapult, which preceeded the hydraulic cat of World War II, and today's steam catapult. (Courtesy of the artist)

Santy . . . Who?

Naval aviation has a rich history—not just the glamorous, more exciting combat log, but also in development and daily operations. However, the people in the cockpits rarely recall it. That's unfortunate. There's much to be learned from many aspects about how our fathers and grandfathers plied their trade. Historians have overused the following quote from the 19th century philosopher George Santayana: "Those who cannot remember the past are condemned to repeat it." But we, in our profession, can certainly apply it to our activities.

Approach does not usually print historical articles. We concentrate on current problems, attitudes, and systems. But history *can* be a safety tool. In this issue, we'd like to step back for a moment with the lead article, which talks about the things that destroyed aircraft 60 years ago.

I'm often struck by how much we look like our ancestors. The 27-year-old lieutenants in their F-14s copy their predecessors in their Boeing F4B biplanes as they radiate youthful confidence and skill. The only visual differences are really sartorial. Flight gear and accommodations may have changed, but the human aspect of our profession has not.

Consider this month's lead story. Where have we come from in the last six decades? As I wrote in the April issue, these are tumultuous times for the Navy and Marine Corps—indeed, all military aviation—and we need to gain a firm grip on our roots to survive.

Peter Mersky
Acting Editor

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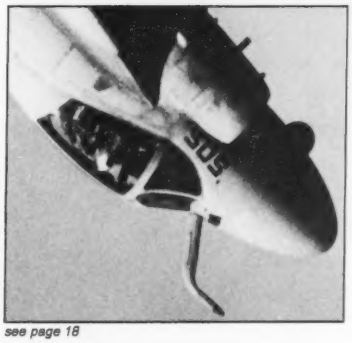

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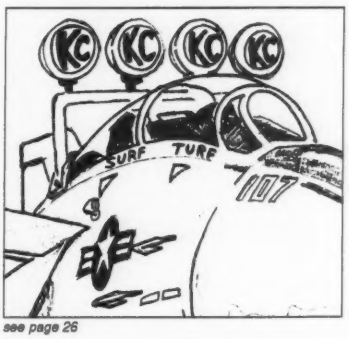

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Departments

On the cover: "The Professionals," by Jim Dietz. Members of VF-2, "the Flying Chiefs," prepare to launch in their Boeing F4B-4s from USS *Lexington* (CV-2). Colored deck jerseys have been with us a long time, but the enlisted Naval Aviation Pilot (NAP) left the scene some time ago. (Courtesy of the artist)

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David S. Ingalls peers from the cockpit of his XF8C-7. 1. As a 19-year-old pilot, Ingalls became the Navy's first and only ace in World War I while flying with an RAF Camel squadron.

As a naval aviator in the 1990s, do you ever consider what you may have in common with your counterpart of 60 years ago, dressed in his baggy flight suit, encumbered by only a parachute harness and smelly leather helmet?

Probably not.

Have We Come a Long Way, Baby?

By Peter Mersky

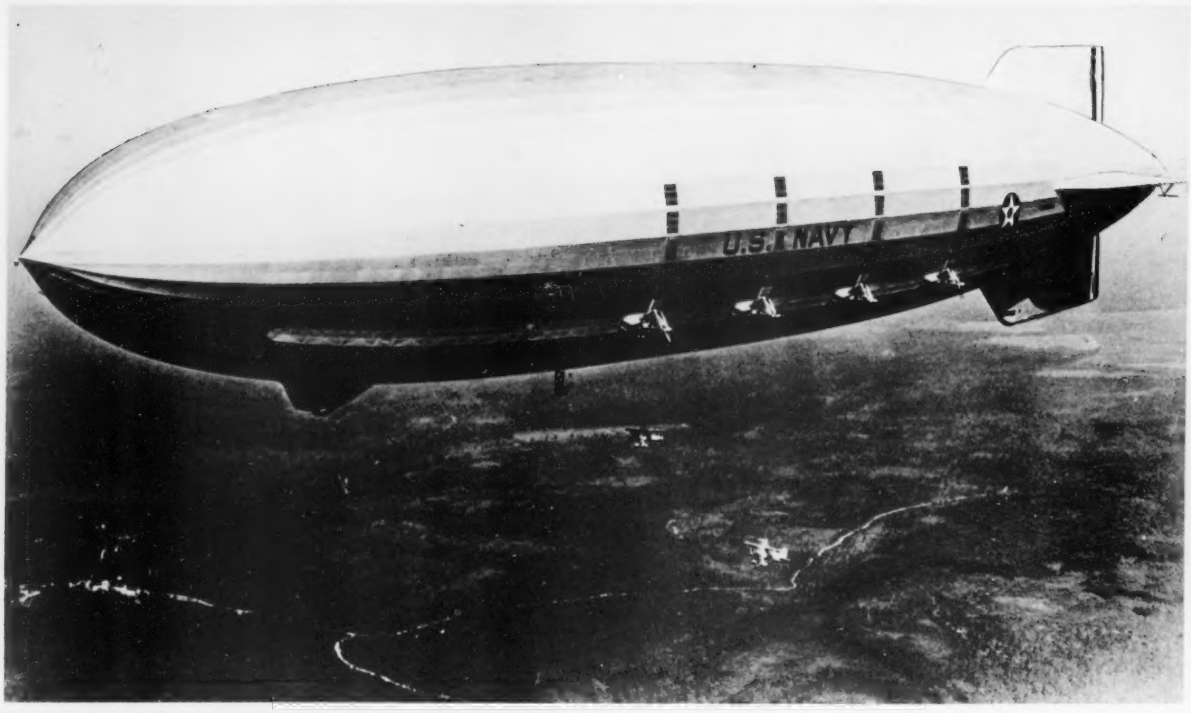
We were rummaging around in our files a while ago, and discovered three reports from the early 1930s. Two were signed by David S. Ingalls, the Assistant Secretary of the Navy for Aeronautics. Besides being a member of the First Yale Unit (which formed the basis of today's Naval Air Reserve) *and* the Navy's first ace, Ingalls, at age 31, was an accomplished bureaucrat and aviator, who had gained the confidence of the Herbert Hoover administration.

The report for FY 1929, dated 9 April 1930, was an "Analysis of Aviation Accidents."

"In general," the secretary said, "improved safety in flying has progressed... It is deplorable that eight lives should have been lost by collision with other aircraft... (which) is clearly avoidable and is caused solely by the carelessness of the pilot."

Ingalls also lamented that "the spin has been the deadliest enemy of aviators... this must not continue."

One of Ingalls' perks as Assistant Secretary of the Navy for Aeronautics was a personal aircraft. This modified Curtiss two-seater replaced a single-seat Boeing F4B.



The rigid airship USS *Macon* recovers its Sparrowhawks. Until the mid-1950s, lighter-than-air represented a good portion of naval aviation. The big ships were among the safest types in the inventory.

The modern generation *should* be smarter and safer. They talk safety in the ready room, have "true confessions" in an AOM or stand-down, spend hundreds of hours annually in ground-procedures trainers, and read reams of literature on getting the most from themselves and their equipment. Yet, it's the aviator who ultimately makes the difference—if you compare old mishaps and new mishaps—and he doesn't seem to have changed since the days of straight decks and canvas-covered, fixed-gear biplanes.

There's no question that the hardware has changed. As the fourth decade of the 20th century dawned, the Navy was just starting to develop its carrier fleet. USS *Lexington* (CV-2) had begun regular operations, and on September 26, 1930, the Navy laid the keel for USS *Ranger* (CV-4), the first ship specifically designed as an aircraft carrier.

At this time, the Navy also ordered a Pitcairn XOP-1 autogyro (a harbinger of the squadrons of rotary-winged aircraft that we now take for granted).

The hottest Navy and Marine Corps fighters were the Curtiss F6C and Boeing F4B series, which served ashore and onboard carriers, and could blister along at speeds approaching 200 miles per hour.

The most unusual type, after the autogyro, was the Curtiss F9C Sparrowhawk, which operated, sometimes *sans* landing gear, from the dirigibles USS *Akron* (ZRS-4) and USS *Macon* (ZRS-5), as a parasite fighter. The little F9C hung from a trapeze, which was lowered into the wind, allowing the Sparrowhawk to detach or come aboard, providing the ponderous airships with their own "organic" escort and CAP.

The little Curtiss F9C Sparrowhawk was perhaps the definitive "parasite fighter," a concept that lingered well into the 1950s. The pilot's overhead view was unobstructed, which was good, considering that he needed all the help he could get when trying to recover aboard one of two large airships equipped to carry the type.

During FY 1929, 30 fatalities had occurred in naval aviation. Pilot error was given 59.44 percent of the blame. It appeared that the worst time for a pilot to have a fatal accident was when he had accumulated 200-400 hours. Pilots in this category were completing their first fleet tours after receiving their wings. "The flush of over-confidence seems to carry the novice beyond the realm of his abilities," the report noted. Pilots who had more than 400 hours and were involved in accidents received less pilot-error blame.

The second report, for FY 1930, dated 16 March 1931, continued Ingalls' train of thought. "Pilot technique" and engine failure continued to be major causes of fatal accidents. Fifty-seven percent of all accidents involved pilots with less than 600 hours.

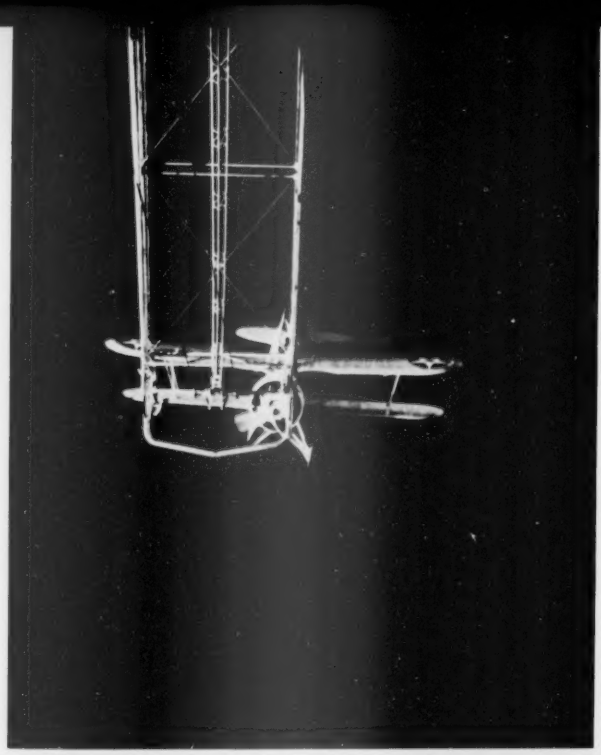
"A pilot should constantly bear in mind," the FY 1930 report admonished, "that he is never too old nor too good to continue to learn, both from new experiences and the experience of others. Conditions and equipment are constantly changing and generally improving, and even though a pilot has successfully placed 2,000 hours of flying behind him, he must be alert to keep up with new conditions."

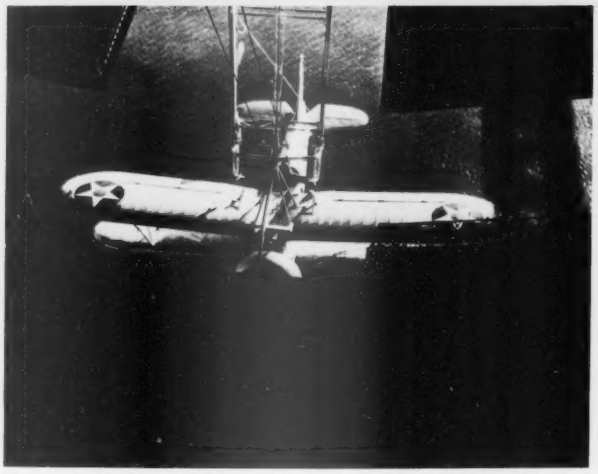
Another area causing concern was landing accidents, which according to the FY 1930 report, was the leading cause of all accidents. Remember that retractable landing gear was only in development in the early 1930s. By mid-decade, a few designs had incorporated this important step, as in the case of the first Grumman aircraft, which used a hand-cranked bicycle chain arrangement. Ground observers could watch Grumman FF-1s porpoise up and down from the ground as their pilots furiously cranked their main gear up against the fuselage. This technique continued through the early 1940s, with the F4F Wildcat, whose gear usually required 30-40 turns to raise. A pilot could be worn out before he was barely five minutes into a flight.

The last report we unearthed was for FY 1932, dated 27 July 1933, and signed by the CNO, Adm. W.H. Standley. With a change in administrations (Franklin D. Roosevelt had "relieved" the embattled Hoover the previous March), David Ingalls had left his position in the Bureau of Aeronautics.

Apologizing for the late issue date—..."due to the press of special work, it has been impossible to have issued this publication at a date nearer the end of the year under analysis"—CNO reported that FY 1932 had seen an improvement in accident rates over 1931.

Pilot error caused 50 percent of all accidents. "Constant effort must be exerted by the individual pilots and by the squadron commanders to improve the quality of pilot technique as much as possible under the operating conditions."



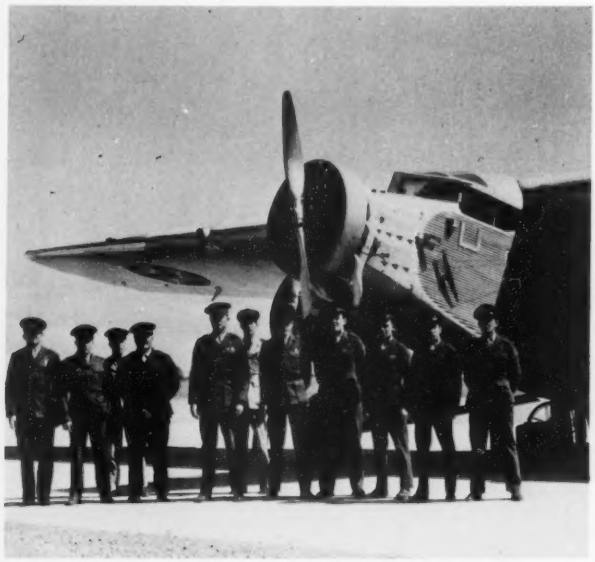


The pilot of a Curtiss F9C approaches the trapeze of USS *Akron*. Tricky to accomplish, the hook-on was subject to all the outside influences that today's carrier pilots would encounter, including wind, burble and getting the hook to engage the trapeze.

FY 1932 also saw a reduction in all accidents by 33 percent; fatalities decreased by 19 percent, both admirable rate reductions. "However," the report included, "there was no improvement in the number of collision accidents, there being 18 in 1931 and 19 in 1932." Structural failure had also risen sharply as a cause of accidents, and pilot error continued to be the main cause of most accidents.

"Don't stall, don't stall, don't stall!" the FY 1932 report warned. "The need for continued appreciation of that safety law is increasing—the figures for deaths from spins show no signs of improvement."

Now, more than 60 years later, and adjusting for technology advances, the question is, are we still looking at these same areas as cause factors in what we now call "mishaps?" Aircrew error, which allows a departure (read "stall"), lack of crew coordination (which covers a multitude of sins such as lookout doctrine or backup) that leads to midairs, and landing mishaps are still with us. In 1930, "pilot error" accounted for 50 percent of all accidents. In 1993, 27 mishaps, 63 percent of the year's total of 43 Class A mishaps, included "aircrew factors" as a main cause.



Like today's C-9, the Ford JR-3 was a military version of a successful civilian airliner. The trimotor design served throughout the 1930s, flying in the U.S., as well as in combat areas such as Central America.

In 1930, Navy and Marine Corps aircrews flew 264,788 hours, had 431 accidents, which destroyed 81 aircraft and killed 18 aviators. The rate was 162.77. In contrast, in 1993, flying 1,756,379 hours, the rate was down to 2.45, with 45 Class A mishaps, involving the loss of 44 aircraft and 42 crewmen.

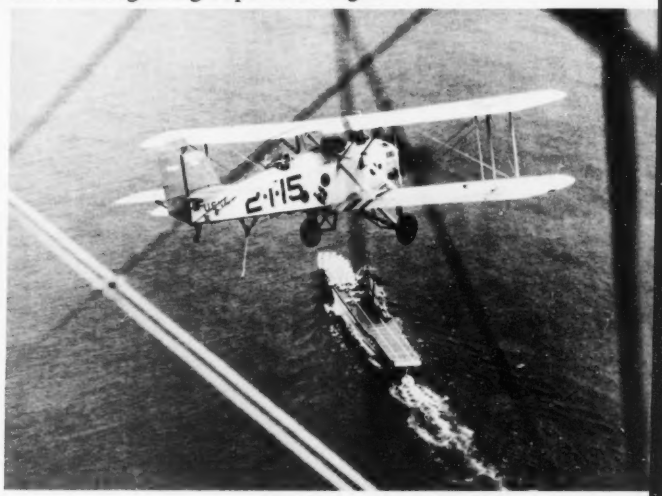
Today, we just flip the gear handle, and electricity and hydraulics raise the huge gear, while we attend to other matters in the cockpit. Radio channels are digital, and quickly fall into place with the punch of a preset button. Long-range radar and UHF signals reach out to us from 200 miles to mother us back to the ship in weather that ground seagulls, and certainly would have kept our grandfathers in the hangar.

In 1930, aircrews flew 264,788 hours, had 431 accidents. The rate was 162.77.

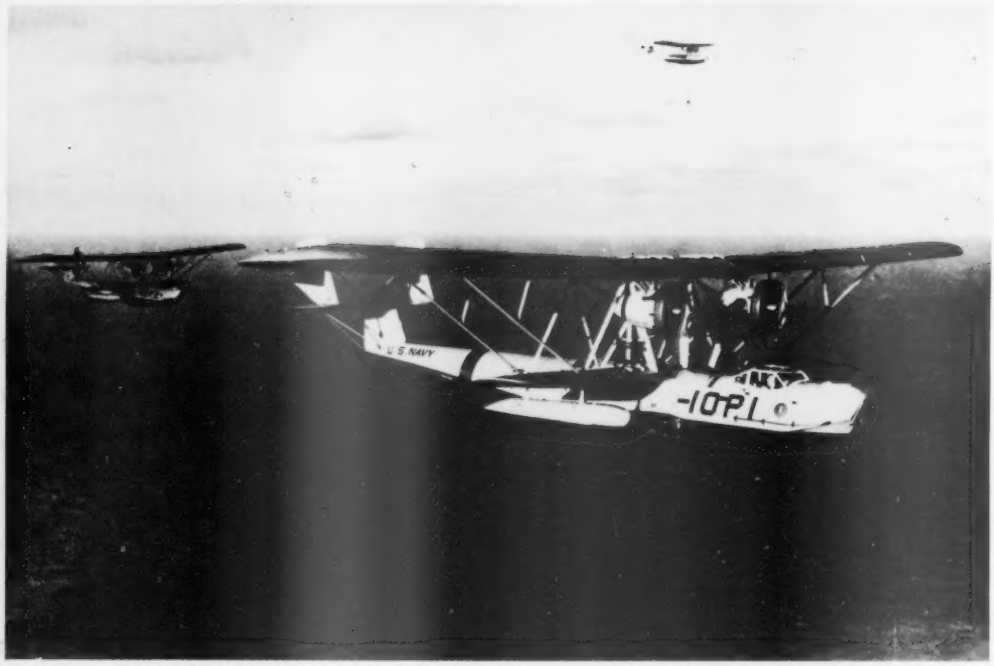
In contrast, in 1993, flying 1,756,379 hours, the rate was 2.45...

Yet, for all the technological advances, we still find ourselves with ancient problems. A P-3 pilot (even with a copilot and flight engineer behind him) lands gear up. The resulting fire destroys his expensive aircraft, and he and his crew barely escape with their lives.

Even though the *number* of times such a mishap occurs has been drastically reduced, the dollar value of each incident transcends the change in frequency. Fatigue and preceived operational pressure have been with us since the beginning of powered flight.

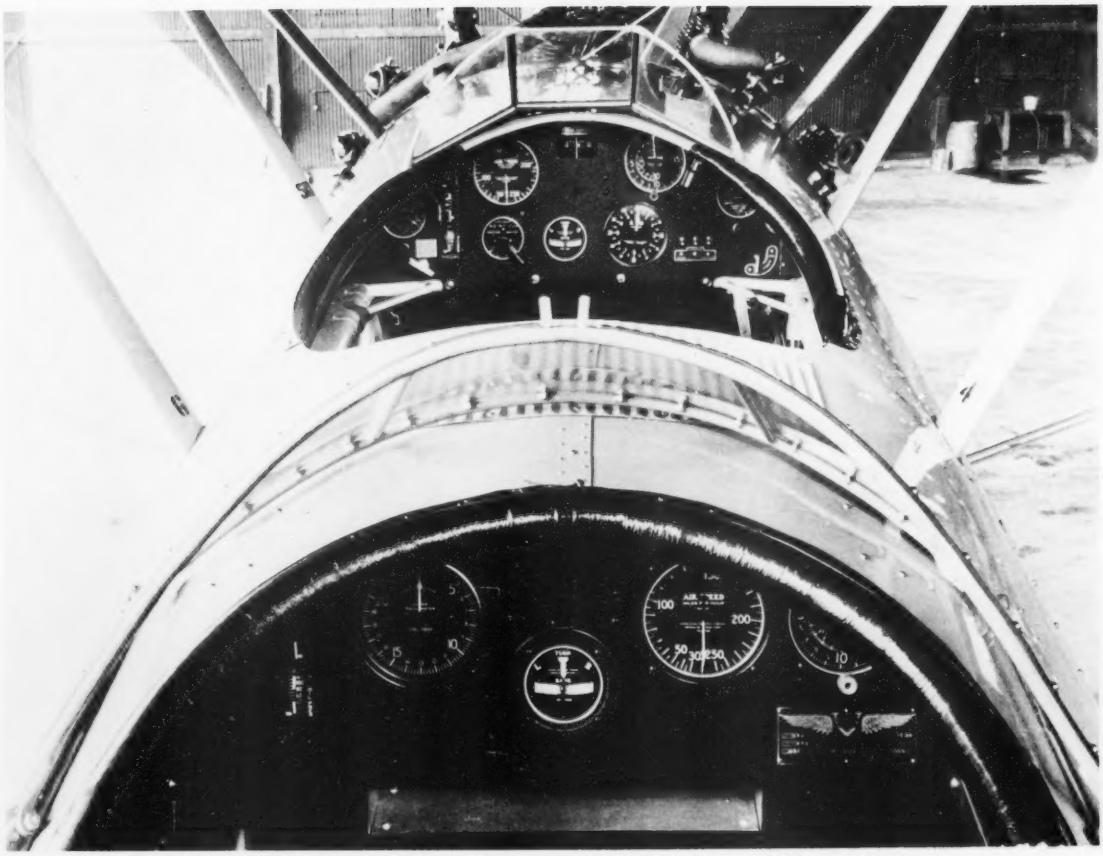


A Martin T4M torpedo bomber of VT-2B overhead USS *Saratoga*. The three-place Martin was typical of the period in layout and performance.



These Consolidated P2Y-1s of VP-10, shown during 1932 maneuvers, were the P-3s of their day, flying the contemporary maritime patrol mission along the U.S. coastline, as well as in the vast Pacific.

Retractable landing gear was a major innovation in the early 1930s. It first appeared on Grumman FF-1s. Here, a line chief and his men check out the latest in modern design on their SF-1, a variation of the "FiFi."



A far cry from today's clock-and-light-festooned cockpits, the panels of this Stearman N2S use the most basic layout, which had not progressed too far from those of World War I types nearly 20 years before.

Command policy and SOP are vital links in mishap prevention for, while the hardware has progressed, the basic human desire to excel, or to press, has not changed in 60 years. In the 1930s, safety considerations were not as prominent as they are today, and much of the time, an individual pilot's skill in avoiding a spin, or extricating himself and his plane from one, was the true measure of just how safe an aviator he really was.

The classic spin was much more common, because of the light, relatively lightly loaded biplanes of the period. Unintentional spins and departures from controlled flight are still with us, but not to the extent of six decades ago. Is this more a case of advances in flight controls? Maybe. Inattention and inexperience, coupled with that aviator "malady" of pressing the edge of the envelope, can still put you in a flat spin where sometimes the only escape is via Martin-Baker.

As Adm. Standley's report noted:

It is important to invite the attention of all pilots and officers in command to their realization of flight operations responsibility. This cannot be overestimated. A naval aircraft is a very valuable piece of equipment, the cost and maintenance of which represents substantial investment by the Navy. The pilot ordered and permitted to fly this aircraft does so because of special confidence reposed in his judgment, technique and apprecation of his responsibility... In all flight operations, personnel must (conform to) commonly accepted good flying laws, and any special restrictions imposed by... naval, military or civilian flying authorities. ◄

A Can of Cola, a Quart of Water, and Me

By LCdr. R.L. Gross, Jr.

Ever have one of "those" times when something happened to you, but you weren't sure if you should tell the flight surgeon? You know, it was only a "little" thing. It had never happened before. It was not a sinus problem. Nobody else knew. It wasn't a downing problem anyway, you thought.

I was in a LAMPS det onboard a cruiser. It was the day prior to pulling into home port. The weather was CAVU, and we were conducting a double bag of surface surveillance and pax transfers to and from the carrier. Our crew had been flying for 6.5 hours when we lifted off the carrier with our CO to RTB. Mother was 20 minutes away, with 45 minutes until sunset. No problem. We'd be on deck with about 800 pounds of fuel before sunset. Then, we talked to mother and found out that our second helo had been conducting FCF ground turns. Its main rotor blades would not fold, either automatically or with the manual cheater box. *Now* we had a problem. It wasn't that we didn't have a deck to land on; a destroyer was five miles away from mother with their helo in the hangar. The problem was internal to the aircraft, or shall I say, internal to the aircraft commander.

During the previous 6.5 hours, I had drunk one can of cola and about a quart of water. Before lifting from the carrier I had had a full-bladder light for the last 30 minutes. Holding out for another 20 minutes was no big deal. I've gone longer than that before.

I have 2,400 hours of flying time and never have I had to use a relief tube or a piddle pack. This is not a feat to prove my manhood or any other claim to fame. I have nothing against using the appropriate devices provided by NAVAIR for handling such situations. It is just that I've always been able to wait until we were on deck or had an opportunity during a hot pump to relieve myself.

Once I realized that the flight might be extended, I decided to conduct a leak check of the piddle pack that had been in my helmet bag for the last six months.

The problem started after the satisfactory leak check of the piddle pack. Just as I finished, a gripping pain hit both kidneys. It felt like someone was squeezing as hard as they could. The pain's intensity was between smashing a fingernail on the low end, and a spinal tap on the high end (both of which I've experienced). This wasn't fun, but to go along with the big squeeze, I was nauseous, dizzy, and feeling faint.

To add to the excitement, try explaining what's wrong to your copilot (an ensign with 450 hours), and closing up the piddle pack before it spilled.

The ensign did just fine. He suggested opening the scupper (a 2-inch window vent) to get some fresh air. That helped me come back to a normal state.

The time from onset to when I felt normal was about five minutes. I was thankful for having a copilot, without whom I would have been in a very difficult situation.

OK, what actually happened? I will try to describe it in layman's terms. For those who like big words, please see the flight surgeon's article at the end. I talked to him the next day in port.

I was hesitant to discuss my tear-jerking experience with the Doc for fear of... Well, you aviators know what I mean. The explanation I got was simple. Basically, I had an overpressurization of the bladder. What this means is that we need a new caution light to go along with the full-bladder light, a "bladder hi-press" light.

The bladder became oversized as it expanded to handle the extra fluid, and as the muscles tensed to contract the bladder during urination, some urine was pushed the wrong way on a one-way street. That's right, back up into the kidneys. The Doc said that it was something akin to passing a kidney stone (which I have not experienced).

Aircrews should always have some way to relieve themselves while flying, and we shouldn't hesitate to use it when we have to. Holding it in and trying to wait until on deck could be a costly delay, as the flight surgeon's editorial will explain.

LCdr. Gross flies with HSL-46's Det 7.

From the Flight Surgeon

By Lt. J. Shaughnessy, MC (FS)

This situation is not common but certainly not unheard of. For most people and occupations, it is not dangerous or serious, and therefore, medical literature does not cover it very well. It is, however, a problem when you are flying multimillion-dollar aircraft in bad weather or during a demanding mission, when, for reasons of safety, you can't afford to be incapacitated.

The pain that LCdr. Gross described had several possible causes, some of which were related to an "overfull" bladder.

To quickly review the anatomy, the kidneys are located about halfway up the back (in the flanks) and produce urine. The urine passes into two tubes called ureters and drain into the bladder. When you want to void, your bladder contracts, and urine goes into the urethra and exits the body.

As the bladder fills, its walls stretch and after a certain volume, usually 150 milliliters (about 4.5 ounces), your brain gets the message that it is time to empty. When you voluntarily ignore the message, the urge to void increases, but the sphincter muscles that prevent involuntary voiding usually remain intact.

Although the bladder is at its maximum capacity, the kidneys continue to produce urine, which may accumulate in the ureters and back up into the kidneys themselves. When you finally void, the ureters, which have muscle in them and were previously distended, rapidly decompress and may go into spasm. This spasm would feel like a sudden onset of severe flank pain, lasting for several minutes. The severity of the pain is often described as being incapacitating.

There is no reason to believe that people who may experience this situation are anatomically different or have a history of other urinary-tract problems. There is no way to predict who may or may not develop a similar situation, even if in the past you have never had a problem. As previously mentioned, the answer is simple; when you have to go, do it.

Doing things like intentionally dehydrating yourself (which some people do) is not the answer. Relief tubes and piddle packs may not be the most important piece of equipment in the aircraft, but they are there for a reason, and convenience is only one of them.

Lt. Shaughnessy is with the aircraft operations det at NS Mayport.

This pilot felt nauseous, dizzy and faint—medically referred to as a vagal response—with a real danger of passing out. Another possibility: a hard landing or trap resulting in a ruptured bladder.—Lt. Anil Taneja, MC, Head, Physiology Branch, Naval Safety Center

One Out of Seventeen Ain't Bad... *I Got Lucky*

Peter Mersky

By Lt. Dennis C. Mikeska

Near the end of my first cruise, the early flyoff was announced. Only one of the 17 pilots in my squadron was going to get the honors. With only 1,500 miles to home and a KC-135 tanker, I got lucky.

It was a 10-plane flyoff. The brief was three hours before launch. All the players reviewed their standard preflight information: weather, divert fields, emergencies, and fuel. Everyone left the brief feeling confident, especially me. Yeah, we had it "suitcased." All I needed to do was to be at my jet on time and have it up and ready 30 minutes before takeoff.

As we started up, I glanced at the spare. Its pilot was probably hoping my jet would go down. I wished positive thoughts to my airplane, like, "Come on, baby, please don't let me down. Just get me home. All I have to do is get airborne."

Before I knew it, the yellowshirt was standing in front of my jet signaling, "Up and ready?" With a simple head nod, I was on my way to the cat, almost.

Unfortunately, there was a line of aircraft behind the JBD for cat 3. Patiently, I waited until it was my turn. I taxied out from just in front of the LSO platform, crossed

the wires, and turned toward cat 3. Then, I began to have problems. Slime and grease coated our end-of-cruise flight deck. Using great caution, I finally slid to a stop just behind the JBD and said to myself, "I can't wait to get off this slippery deck and back to the beach. I really hate sliding around on this deck."

Happy to be on my way, I gave a thumbs-up to the guy with the weight board.

Now the only thing between me and that KC-135 was an A-6 about to go into tension on cat 3. Looking at the Intruder, I noticed it was cocked about 15 degrees to the track. The cat officer took a second look at the A-6 and decided to shoot him anyway.

Then it happened. Sitting in my jet just behind the JBD and oriented at about 45 degrees to the track, my jet began to slide. I wasn't taxiing. This couldn't be real. As my airplane rotated 45 degrees and slid about 20 feet aft, I decided it was time to drop the hook in hope that somebody would understand the lost-brakes signal. I tried nosewheel steering. Nothing.

The LSO platform and the catwalk got closer and closer. With my nose pointed at the water off the port side of the ship, I discarded the thought of using the throttles. I thought, "Suspend," but just for a second, because I remembered how long it takes for anyone in tension to bring the throttles back. With just a few feet to go before my port mainmount went into the catwalk and over the side, I felt a bump as my jet slid over the 4-wire. I started thinking about ejecting.

The deck edge disappeared under my left canopy rail, and blue water filled my field of view. My hand found the ejection handle. I began to assume a good body position and firmly grasp the ejection handle just as there was an abrupt jolt. My heart stopped as the jet did, with only five feet left between my port gear and the catwalk.

Relieved, I looked down and noticed that there must have been at least 20 people around my airplane. My troubleshooter motioned for the Inter-Communication System (ICS). As I listened, he explained the need to inspect my port gear. Meanwhile, I thought, "Oh, no, my jet can't be down!" As they hooked the tow tractor up to pull me out of the wires, there was a triumphant thumbs up from my shooter.

Relieved and after some maneuvering, I finally found myself on the cat. Home was just 1,500 miles away. It was time to take tension. After setting the throttles to military, I had my next surprise of the day. The master caution tone in my headset actuated, along with a "check seat" caution, which was prominently displayed on my digital display indicator (DDI). This alerted me to the fact that my ejection seat was not armed! A quick look down at the seat's safe/arm handle confirmed it. The ejection seat was safed! Quickly, I reached down, armed the seat, and saluted the catapult officer.

Thirty minutes into the flight, I thought "Holy smokes, I couldn't have ejected even if I wanted to... My seat was never armed... How could that have happened? Never do that again!"

With a tally on the tanker and a positive check-in on boom frequency, I relaxed a little, but the flight wasn't over yet. Fortunately the airborne refueling was uneventful, and the rest of the trip home went like clockwork.

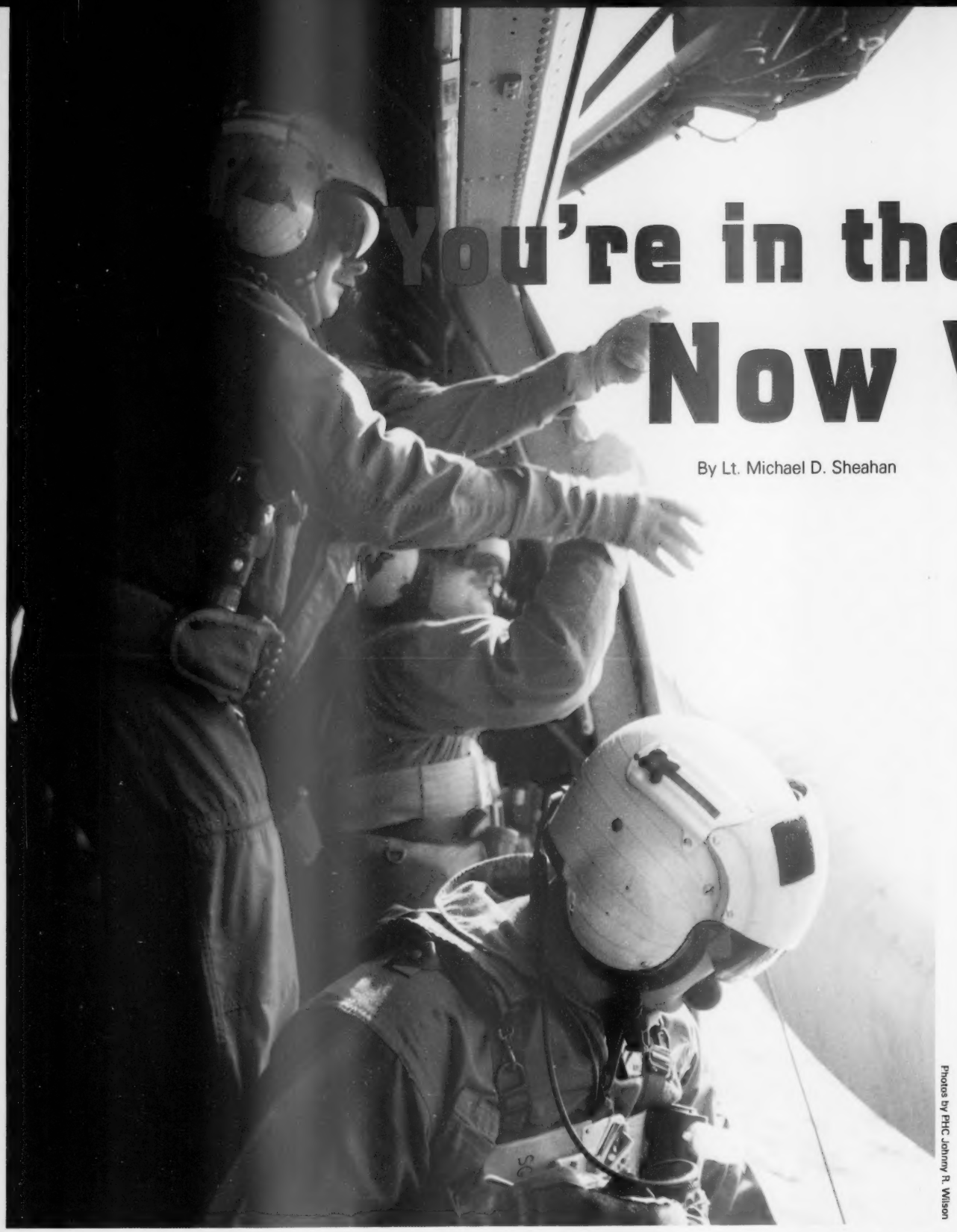
Sometime later, I learned that my plane captain was my salvation on that auspicious day. He had positioned himself between my jet and the edge of the boat while throwing several tiedown chains in front of one of the sliding mainmounts. He probably slowed my jet down, ultimately stopping it on top of the arresting gear pendant. ◀

Lt. Mikeska flies with VFA-195.

Richard Jackson

You're in the Now

By Lt. Michael D. Sheahan



Photos by PHC Johnny R. Wilson

Water! What?

"Eject, eject, eject!" Three words a fixed-wing carrier aviator hates to hear. OK, your fears have become reality. You've ejected and are now in the water. What next? Tower vectors the SAR helicopter to your position immediately. However, if you ejected away from the ship, the helo crew must establish a datum to begin their search. To do this, they have to consider winds, and how old the information is.

Once the helo arrives on the scene, you will more than likely be wondering, "How is the crew going to find me?" First, they will determine your exact position by using one of their various search patterns oriented around your last known position. What can you do to help? It all depends on how fast the crew can locate you.

In a high sea state, your white helmet will not be as visible as you may think, so you can help by splashing water over your head or by using your smoke markers. You can also try to find other members of your crew to prevent the helo from having to make multiple approaches.

Once the SAR helo has you and your crew in sight, the next question is, "Who gets rescued first?"

It all boils down to who is in the most trouble. If it is night or IMC, the helo will conduct a maneuver called the "wind line rescue pattern." During this maneuver, the helo will overfly you and mark your position with matrix lights or smoke markers. Once on top, the pilots of the helo determine the direction and velocity of the winds and the direction they need to fly to turn inbound to you with the wind on their nose. At about 1,000 yards, the pilots will begin an automatic approach to a coupled hover.

The rescue helo should establish a hover 25 to 50 yards from you. Here, they pass "control" to the crewman in back, who will expertly "fly" the helo to your position using a "joystick." While hovering the helo directly over your position, he simultaneously lowers the rescue swimmer down the hoist for the pickup.

If the weather is day or VMC, your pickup will be much faster. The helo crew can adjust their approach to arrive over you into the wind without having to fly a downwind. This approach will be a 10-foot/10-knot or 15-foot/O-knot position where the SAR swimmer will jump out and begin assisting you.

Once in the water, the rescue swimmer will give the helo a thumbs-up to indicate that he is OK. He will then begin to swim toward you, avoiding your chute and getting into a position behind you. He lives by a simple code: I.C.I.C. (in close, in control). He wants to get behind you in case you are in shock and attempt to climb over him to get out of the water.

Once he gets to you, he will place his hands on you and will not take then off until you are in the helo. He will begin talking to you, even if you are unconscious, to reassure and calm you. If he asks you to help him, do so; otherwise, do not.

His first priority is to get your oxygen mask off since it can suffocate you. Afterward, he will begin his checks, starting with your head, neck, chest, then your arms, for any lines (i.e., are you entangled in the risers?) or injuries. He will remove your koch fittings and continue with his checks to prepare you for your ride up the hoist.

His next check will be a procedure called the "spinal highway." This requires him to go under the water, so do not worry. He will place his head on your buttock and remove your mini-koch fittings. While underwater, he will pull your legs toward him to check for injuries and shroud lines.

He'll make a final check to make sure he didn't miss anything, and begin hooking you up. He will attach his D-ring to yours, then signal the helo that he is ready for pickup. Another crewman will lower the hoist, and your rescue swimmer will hook you both up before signaling that he is ready to be hoisted.

Once in the cargo door, the crewman in the helo will pull you in with the swimmer on top. Do not try to help; you will only make the crewman work harder.

After you are in the helo, you will be placed on the deck and be given a thorough check. If you require first aid, the crewmen will give it, and, depending on the distance from the ship, you will remain on the helo deck until landing to prevent aggravating any injuries.

Here are some questions you need to ask yourself before every flight. Am I prepared to go in the water? Do I know what to do if I go in? Can I find everything in my survival vest if I need it in a hurry? Can I do it blindfolded? Do I know what will happen to me?

Whether it is your first cat shot or your 500th, your knowledge of what will happen to you and how you can help yourself will help ensure your safe return home. ➤

Lt. Sheahan flies with HS-11.

CPO Warren Grass, USN

Crosscheck

By Lt. Bob Heath

We were four months into Operation Desert Shield, on station in the northern Red Sea. My crew was assigned the late-night tanker Alert 30 to cover the returning CAP.

We briefed and headed for the roof to preflight. Our S-3B had just come up from the hangar, so we manned up and turned the engines, testing the whole system to ensure everything was ready to go. When the TACCO and I were both satisfied with the aircraft, we set the alert and headed for our racks.

Two hours later, I jumped from my rack to the sound of a familiar call: "Launch the Alert 30 S-3 tanker."

We ran to the flight deck and quickly accomplished the start procedures. Twenty minutes later, we were on the cat. The aircraft went into tension, and after one final wipeout and instrument check... I turned on the lights. The next 20 seconds seemed like an eternity.

The cat shot felt good as the aircraft reached the end of the deck. I started to rotate the nose, but something was wrong. My eyes immediately went to the AOA gauge, which was pegged full up! I instinctively pushed the nose down to break the stall, but the gauge did not move. I shifted my scan to the altimeter and VSI, which indicated a slight rate of descent passing through 50 feet. The seat of my pants finally caught up with the night cat shot. The aircraft was not in stall buffet, and a quick check of the airspeed showed 140 knots and increasing. I disregarded the AOA and set the nose at 10 degrees up. The aircraft immediately began to climb away from the water.

We climbed overhead and examined what we had. The S-3 was flying fine, but the AOA was 10 units high at 250 knots, explaining the false indication experienced on takeoff. We advised the ship of our status and after giving 10,000 pounds of fuel to the incoming fighters, we returned for a no-AOA approach.

After testing the AOA, we found that during rework, the pilot's gauge was incorrectly calibrated, which caused the bad indications. The lesson learned by this crew was that the instruments can save your life if used together. However, if only one is relied on to tell the whole story, that story may have an unhappy ending. ◀

Lt. Heath flies with VS-30.

Black Cloud's

By Lt. Bradley Burgess

We were just over a month into my first WESTPAC cruise onboard USS *Abraham Lincoln* to the Persian Gulf in support of Operation Southern Watch. As a nugget EA-6B driver, I had previously had the pleasure of overcoming several minor emergencies, earning the dubious pseudo-callsign of "Black Cloud." What I lacked, however, was the experience of carrier operations.

Cyclic ops had become almost second nature to us, and we all looked forward to the upcoming combat time in "the box." We had been flying together for several months, and each of us knew our jobs. We completed our crew brief and manned up for a night-ESM mission into the northern Indian Ocean. Following startup and pre-launch checks, the yellowshirt broke us down, and we taxied to cat 4.

My squadron briefs that any member may call a suspend while on the catapult. In the EA-6B, this arrangement allows for a maximum amount of scrutiny during one of the most critical phases of carrier operations. As the catapult officer directed us to go into tension, I slowly increased the throttles to military, raised the catapult grip, and began my instrument scan.

Even before the throttles had reached military, I noticed a rather unnerving rise in the No.2 engine's EGT as it started to skyrocket toward the top of the tape. My immediate concern was that I would next see the red "R FIRE" light come on. Instinctively, I pulled both throttles to idle as I called out, "High EGT!" on the ICS to my rightseater, thinking that he had clearly seen the same indications and was about to call the Boss for a suspend.

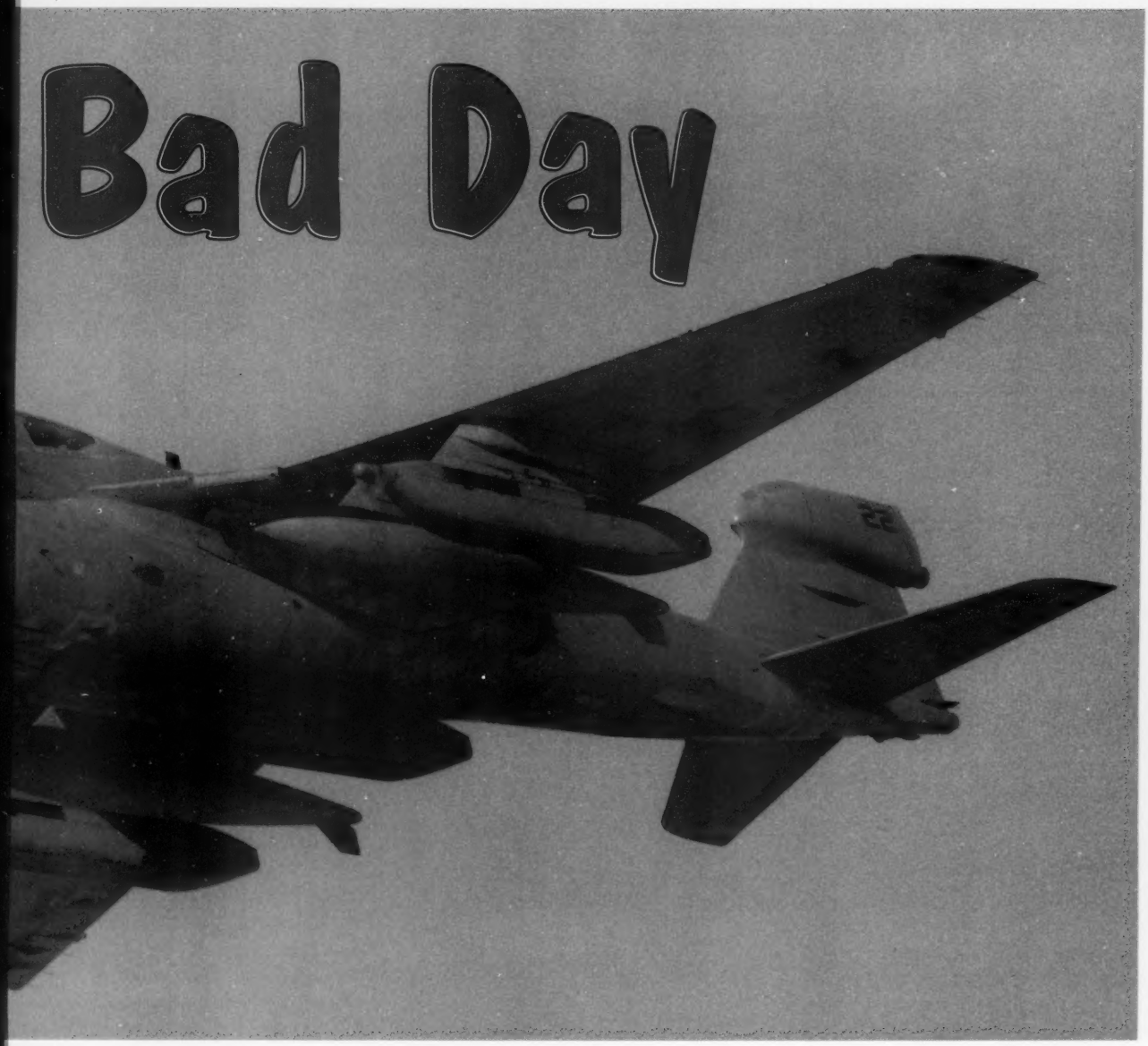
Unfortunately, he couldn't see the EGT tapes from his position, and his initial reaction was to give me his best "What the hell!" look.

I can only imagine what the Boss was thinking as he saw our Prowler go from full power to idle while still in tension. I do remember hearing some choice "words" from the tower, followed by an immediate call for power on the cat.

Without thinking, I immediately shoved the throttles back to military, and watched again as the EGT began its heart-stopping climb to the top of the tapes.

By now, I began to regain my composure as I realized that the Boss would probably be more difficult to extinguish than a mere fire on the cat. Fortunately, my rightseater had the sense to finally call for a suspend as he leaned over to actually see what had caused my reaction.

Bad Day



Finally hearing the Boss' call to suspend, I nearly pulled the throttles back through the idle-stops in my haste to cool off the hot engine. I realized that the tapes were now returning to a normal idle indication, and my heartbeat and breathing returned to normal.

The high EGT indication could have been caused by any number of problems, ranging from a faulty indicator to an impending engine fire. Although pulling the throttles back to idle may have seemed like the logical procedure at the time, especially because of my lack of shipboard experience, I had let the fear of a possible engine fire erase the fact that we were still at full tension on a catapult, ready to be launched at a moment's notice.

Being shot off the pointy end at idle would have been far more dangerous than a fire on deck, and could have resulted in the loss of the aircraft and aircrew. The high EGT made me momentarily lose the big picture.

I came away from the experience a wiser and perhaps more confident naval aviator. ◀

Lt. Burgess flies with VAQ-135.

Smooth Operator

By LCdr. Bill Braker

After just completing our on-station time doing escort missions during Operation Earnest Will, we were heading to heaven-on-earth—Australia. The flights were standard SSC and bomb-smoke missions, easy compared to armed escort hops in the Gulf. I was a fleet aviator now. I had just completed a hard line period and was ready to take on any challenge that came to me. So a bomb-smoke hop was a piece of cake.

In the lead aircraft were two senior lieutenants with a lot of cruise experience. We would join overhead the ship and proceed outbound to a clear area for the bombing. Once we completed our bombing in the high pattern, we would rejoin, complete ordnance checks and do some section maneuvering. We briefed the maneuvers, emphasizing how I needed to be smooth. After the formation practice, we would be off to marshal for a night recovery.

The only problem before launch was that the pilot's radio button was dead. I thought, "No problem, since there are two of us in the aircraft and my BN makes most of the calls anyway."

Our bombing went fairly well. The off-target rendezvous was expeditious. I took my position as wingman for section maneuvering, and followed my lead. After some fixed cruise- and wing-matching tailchase, my lead called that we are going "over-the-top." I just followed along. Time for a lead change and my turn up front. I was ready to show this experienced lead just how smooth I could be.

Sometimes a junior pilot confuses smooth with slow, which can cause a problem. The idea of being smooth is to be consistent and do your maneuvers at a controlled rate. I set my throttles and the throttle friction so that they would not creep during the maneuvers, and began to take the lead through some turns, constantly increasing the G and the angle-of-bank. I felt it was time to go over-the-top and called it to my lead. I didn't have all the altitude or airspeed that I wanted, but I had considered that. I did not want to waste any time or act confused.

I started to pull the nose up, keeping a constant G on the aircraft, and then started my roll. Like I said, I wanted to be smooth, but the aircraft was rapidly slowing to a speed that made me uncomfortable. As the aircraft came through 80 degrees AOB, the nose of my A-6 started to come through the horizon. As I continued with the roll, I found myself on my back in a nose-down attitude. I couldn't snap roll the aircraft because my wingman was in a tail-chase position.

My BN continued to call AOB and nose attitude along with our altitude. The last call I heard was, "Fifty degrees nose down, 120-degree AOB, and passing 9,000."

I tried to call to my wingman to bail out, but with my radios not working I couldn't. I decided that this had gone too far and quickly rolled the aircraft to wings level and began a pull. I tried to pull my throttles to idle, but remembered that I had the friction on pretty tight. I finally got the throttles back to idle, put out the speedbrakes and put the stick in my lap. The aircraft's nose did not seem to move fast enough and time compression set in. I thought about calling for an ejection as I saw my BN sitting there, still calling out information, but with both hands firmly wrapped around his lower ejection handle. The thought going through my mind was, "How am I going to explain to the CO that I lost a perfectly good airplane?"

Smooth is consistent... *Not Slow!*

Eventually the nose of the aircraft started to pull away from the water and the rate of descent slowed. Once I bottomed out, I just kept the stick in my lap, and pulled until I was climbing back to a safe altitude. The aircraft had peaked out at 15,000 feet at the beginning of the maneuver and we bottomed out at 500 feet.

"Where is my wingman?" I wondered.

As I started climbing back up, I could see that he was now joining on me. He had been giving me calls the entire

Ltjg. Robert B. Kielbowicz

time on the radio to roll wings level and pull for the sky, but I could not hear him through my BN's altitude and attitude calls. My heart finally started beating again as I headed toward marshal to wait for my push time. I was glad to get three deltas before trying to land.

There were a great many lessons I learned that night. First, never just wing your way into a maneuver. Have the numbers down as to what you want to be looking at. Know when you need to knock it off and start a recovery. Second, do not maneuver the aircraft unless both crew members have good two-way communications. Everyone should brief it on every basic FAM flight. If the aircraft is going to be maneuvering in a multi-plane environment, all players need to be able to communicate for safety-of-flight purposes.

Third, have your minimum ejection altitudes down cold. It would be a terrible waste to eject out of an aircraft that is recoverable, but it would be even worse to ride an unrecoverable aircraft into the deck.

Fourth, smooth does not equal slow. To be smooth, you just have to be consistent and predictable, so your wingman will have a steady platform to follow through the sky. Any wingman can hang with his lead if he knows what he is going to do next; he doesn't have to be slow to stay with him.

I was never so happy to see a port as I was to see Perth. I came extremely close to missing it. I never took any other flight for granted after that. ◄

LCdr. Braker is a CAT II pilot with VA-52 and will transition to the F/A-18 in the near future.

LCdr. Ken Neubauer

Crossing the JBD, Repeat After Me

By Lt. Ron Pawlo

I was a Cat I pilot out on my first night of CQ off beautiful southern California. My instructor RIO (IR) and I had flown out from NAS Miramar earlier in the day and bagged six day traps. We then shut down and waited for night. A couple hours later, after briefing, we were waiting in flight-deck control for our F-14D. My IR turned to me and said, "I want you to repeat procedures for single-engine off the cat over the ICS each time we cross the JBD." I replied with a nod as we were notified our jet was ready.

We manned Gunslinger 160 and went through normal start, post-start, and takeoff checks before taxing into the shuttle. In all the excitement of my first night catapult shot, I completely forgot our little agreement (imagine that). We received the tension signal, and I pushed the throttles forward.

All engine indications looked normal, so I asked, "Ready to go?"

I got my standard answer, "Let's be somebody."

I flipped the lights on and we were soon headed down the cat. I had my eyes fixed on the instrument panel when about three quarters of the way down the catapult, my IR said, "It looks like a good one," meaning that we didn't have a cold cat shot. I shifted my eyes to the HUD and prepared to set the normal fly-away attitude.

As we hit the end of the stroke, I saw fire glowing all around the canopy, heard several loud bangs, and felt an engine surge. The master-caution light was flashing and the right-engine stall light had illuminated in the HUD.

I looked down and saw the right rpm gauge down at 72 percent. After a couple of expletives on hot mike, I began to go through the boldface procedures. I set 10-degrees pitch attitude on the water-line, then put the left throttle in full afterburner, keeping the right throttle in military. I called, "Gear's coming," as I raised the handle. The whole time my now pea-sized brain was having trouble deciding which rudder I should push to counter the ever-increasing yaw. I must have resorted to my T-34 days because I found myself ignoring the engine rpm tapes and looking directly at the needle-ball turn-and-slip indicator.

Noticing the ball way out to the left, I applied left rudder and began to trim the ball back to the center.

Sitting behind me, nice and calm, my instructor asked, "Do you have it?"

I answered, "I think so." Fortunately, the jet continued to climb.

When we felt that we were safely airborne, we began to complete the compressor-stall boldface. With the aircraft in 1.0-G flight, I retarded the right engine to idle as the banging stopped and the flames subsided. Once we were comfortably flying, around 8,000 feet, we looked at the engine gauges and master caution panel.

The stalled engine had dropped to the secondary mode. This is a reliable system where the main-engine control hydromechanically schedules fuel flow (not electronically by the augmenter-fan temperature control), and afterburner operation is inhibited.

The HUD still showed the right engine to be stalled. The right engine's exhaust nozzles had failed in the 40-percent position, rather than the fully closed position expected in secondary mode.

With PCLs in hand, we elected to try to get the starboard engine back into primary mode. We cycled the mode-select switch for the right engine, then cycled the appropriate circuit breaker. The engine showed to now be operating in the primary mode, but the exhaust nozzle still stayed fixed at 40 percent, and RPM was painfully slow to respond to throttle movements.

We decided to leave the right engine around 80 percent rpm for the duration. With no other problems, we passed up NAS North Island and returned to NAS Miramar.

My IR and I were extremely lucky that night. We were fortunate that nothing happened after we decided to head to Miramar, not North Island. Every naval aviator knows that one does not pass up a suitable alternate when having an emergency. We made this decision because the engines appeared stable and I had no experience at North Island. I am also thankful that one of the F-14D's engines is powerful enough to fly 60,000 pounds of aircraft and fuel (a good argument for new engines on all Tomcats).

There's a lot of gouge floating around on how to handle a Tomcat single engine off the catapult. During FCLPs, one thing I heard was that the Tomcat will fly just fine as long as you set the 10 degrees pitch (14 units AOA max), which is probably what saved the aircraft. By holding 10 degrees, I had enough time to figure which rudder to depress.

Treat each cat shot as if you know you are going to lose an engine. Keep your eyes on the engine rpm all the way down the track, then set the fly-away attitude. Be prepared to step on the good engine, the side with the higher rpm. And always repeat the single-engine boldface when crossing the JBD. ◀

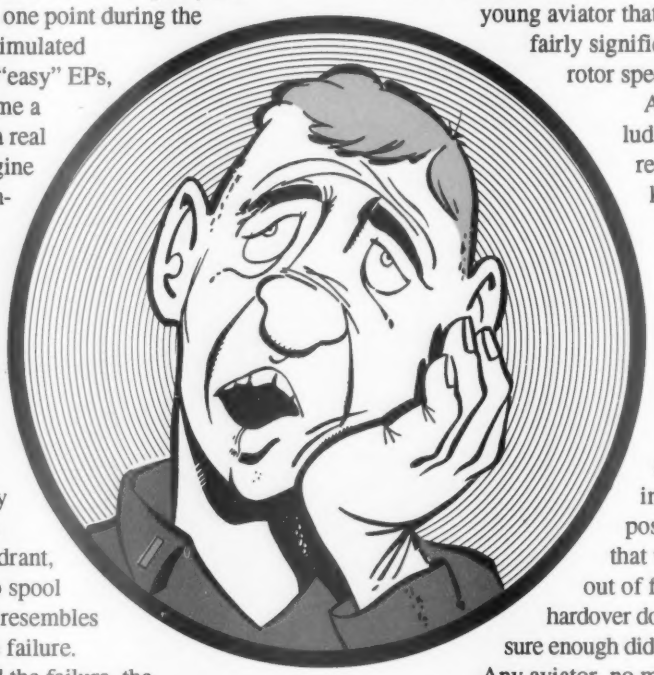
Lt. Pawlo flies with VF-2.

STASH ENSIGN

By Lt. David Shalikashvili

In today's downsizing Navy, many newly designated pilots find themselves "stashed," waiting for an entry date into the fleet-replacement squadron (FRS). This layover may last anywhere from a few months to a year or more. In that time, a new pilot's fragile skills can become, to put it lightly, less than superb. When I began flying with the LAMPS Mk-I FRS after more than six months as a "stash ensign," I definitely fell into this category. Unfortunately, the art of aviation does not always allow for a long warmup grace period.

So there I was, a nugget pilot on one of my first FAM flights in the SH-2F Seasprite, with an experienced HAC as my instructor. At one point during the flight, the HAC initiated simulated emergencies. After a few "easy" EPs, the HAC decided to give me a simulated engine failure, a real problem for the single-engine TH-57 but not for the twin-engine SH-2F. Engine failure in the H-2 usually results in nothing worse than a running landing ashore or a squeeze-the-blood-out-of-the-cyclic, no-hover landing aboard the boat.



The HAC began my simulated engine failure by inducing a hardover down signal into the throttle quadrant, which causes the engine to spool down to a preset limit and resembles the beginning of an engine failure.

After I miss-diagnosed the failure, the instructor made it perfectly clear to me that I was, in fact, looking at a simulated single-engine failure. I more or less immediately executed the procedures, maintaining rotor speed within limits and "beeping up" on both engines. Then, I asked the instructor to break out the NATOPS PCL and review the non-memory items. One of the follow-on procedures is to move the engine-condition lever (ECL) for the failed engine to off, which the HAC simulated by pulling the ECL out of the fly position without actually securing it.

At this point, I was happily chilling out, waiting for the HAC to announce that the EP was done, and that he would restore the cockpit to normal. Imagine my surprise when the HAC said something like, "Oh, rats, the engine failed." (He didn't really say it like that).

Sure enough, a quick perusal of the gauges confirmed that our simulated-engine failure had become real. OK, no problem. We went through the PCL again, right down to where it suggests that we restart the engine, fly home, and receive our war-hero medals.

We tried unsuccessfully to restart the engine, and we had to bring the aircraft home single-engine. Motivated young aviator that I was, I yanked into a fairly significant bank and watched the rotor speed drop like a brick.

After recovering to a less ludicrous rate of turn and receiving a well-deserved kneeboard upside my helmet, we brought the aircraft back home.

So what happened? A thorough postflight revealed nothing, but a maintainer soon told us that a stuck spring in the actuator switch had allowed the switch to stay in the hardover down position. NATOPS tells us that when an ECL is brought out of fly while the actuator is in hardover down, the engine will, and sure enough did, secure.

Any aviator, no matter how experienced, must maintain currency in order to make correct responses in emergency situations. Lack of flight time can rapidly erode flying skills. I would like to think that now my piloting skills have progressed to the point where I am not as slow in diagnosing airframe and engine problems, and that I know better than to do a Blue Angels turn on one engine. ◀

Lt. Shalikashvili was with HSL-34 at the time of this incident. He is currently transitioning to the SH-60 with HSL-40.

Not a Good Day to Get WET

By Ltjg. Karlis S. Burton

"Who has attended ACT, aircrew-coordination training?" our safety officer asked during a recent AOM. Only two people raised their hands. Disappointed by the meager response, he began his refresher on the importance of crew coordination, that mystical term I had heard since intermediate helo training, but hadn't yet gained full appreciation of...until now.

Our mission was a logistics run to two smallboys near the carrier, followed by DLQs and a practice HIFR. In the brief, we discussed the emergency section. The flying pilot would maintain the controls and keep the aircraft out of danger (spelled W-A-T-E-R), while the non-flying pilot would back him up with the emergency procedures in accordance with NATOPS.

From my brief experience in the training command, this meant if you are at the controls and there is a problem, the HAC will handle the EP, then take the controls, even if you are doing well.

The passenger drop-off and DLQs went without a hitch. Since I was in the right seat, I would fly the HIFR portion at about 30-35 feet AGL (primarily an out-of-the cockpit scan), while my HAC monitored the engine instruments and fueling. I tried to fly form on the ship as the deck pitched and rolled. Fueling was slow, and my position relative to the deck looked more like we were doing the tango.

I told myself, "Just relax and concentrate on the ship; if there's a problem..." Bang!

"What was that?" My HAC thought the Wiggins fitting had separated from the deck.

"No, sir, we're still hooked up," the crewman assured him.

"Then what could it have been?" the HAC replied.

Unfortunately, our answer came quickly: the repeated popping of a compressor stall on the No.2 engine.

"Full power!" the HAC cried as the crewmen called, "Emergency breakaway!"

My first thought was to get away from the ship and gain airspeed. Flying straight ahead, away from the ship, I looked down to check our rotor speed. I almost couldn't believe what I saw: 90 percent Nr! My HAC quickly confirmed my fears with a "low Nr" call.

I lowered the collective slightly, reducing the load on the rotor system, and prayed our Nr would increase to safer flight parameters. Three months earlier, one of our aircraft had a similar problem, and the crew had to make a water landing, followed by a water takeoff. However, since the water temperature of the north Atlantic was significantly colder (47° F), I knew today was not a good day to get wet.

Finally, Nr started to build, and I squeaked on as much power as I could without losing precious rotor speed. The aircraft responded, and at 15 feet, we began a gradual climb. Before leveling off, my HAC had completed the EPs, and the compressor stall abated. Meanwhile, the crewmen had prepared the afterstation for ditching, and were standing by to jettison equipment if necessary. As things settled, we discussed our options, and decided as a crew that flying 48 miles to the CV gave us the best chance for a single-engine recovery should the No.2 engine fail during our approach. Upon our arrival, we were given a green deck and landed.

In retrospect, crew coordination was vital in keeping the aircraft out of the water. While I flew the aircraft, my HAC monitored the gauges, and the crewmen observed the fueling process from the afterstation. When the engine stalled, the entire crew responded as briefed without hesitation or discussion. Also, we were all involved in the decision on where to land.

Aircrew coordination works; if you brief it, practice it, and trust it! ◀

Ltjg. Burton flew with HS-9. He is currently assigned to HS-5.

BRAVO ZULU

Left to right: Cpl. Crane, Capt. Samuel Pelham

Capt. Samuel Pelham, USMC
Cpl. Mark Crane, USMC
HMLA-267

Capt. Pelham (HAC) and Cpl. Crane (crew chief) were flying an acceptance check flight following depot-level maintenance on their Huey at Corpus Christi. During landing transition, Capt. Pelham felt an increase in aircraft vibration and saw the rpm warning light come on, indicating a rotor overspeed.

As the HAC prepared to land, Cpl. Crane, in the copilot's seat, confirmed the No. 1 engine was overspeeding and causing the rotor rpm to rise excessively. Capt. Pelham reduced the No. 1 throttle, trying to bring the engine back within operating limitations, but this measure was unsuccessful.

The crew made a successful taxiing autorotation 10 feet above the LZ, then performed an emergency shutdown on deck.

In 20 seconds, they identified and reacted to a hazardous situation, averting serious damage to their aircraft and injury to themselves.

Postflight inspection revealed that the No. 1 automatic fuel-control unit had failed, causing the No. 1 engine to accelerate uncontrollably. ◄

Lt. Brian Stuart
HT-18

Lt. Stuart departed South Whiting Field on a familiarization flight. His aircraft was near maximum gross weight. En route, he initiated a simulated engine failure at 700 feet AGL. The student entered the autorotation, going through the appropriate emergency procedures.

At 400 feet, Lt. Stuart took the controls to wave off. As he cracked the throttle and pulled up on the collective, he heard a high-pitched sound and noticed that the torque would not rise above 40 percent. He suspected sprag-clutch slippage.

With rotor rpm decreasing and the helicopter descending at 1,500 fpm, Lt. Stuart lowered the collective to conserve rotor rpm and ensured that the twist-grip was full open.

He tried again to increase collective but still could not gain enough power to continue level flight. Passing through 300 feet, Lt. Stuart began a 180-degree turn to set up for an autorotation. He rolled the throttle to idle, and again brought it to full open with no change. At 100 feet AGL, he was committed and shot a full autorotation without damage to the aircraft or injury to the crew. ◄

Standing left to right: Cpl. Doyle, Cpl. Bodtke, Sgt. Reeder, 1stLt. Heard, Maj. Curran; kneeling left to right: LCpl. Leal, GySgt. Zamora, Sgt. Shaw

Maj. R.D. Curran, USMC
1stLt. C.N. Heard, USMC
GySgt. J.G. Zamora, USMC
Sgt. J.L. Reeder, USMC
Sgt. D.C. Shaw, USMC
Cpl. J.A. Doyle, USMC
Cpl. D.G. Bodtke, USMC
LCpl. V. Leal, USMC
HMM (REIN)-268

Returning to the ship, Dragon 22's nosegear jammed. The crew exhausted all emergency procedures, but couldn't lower the gear. They decided to try a two-wheel landing, with someone beneath the CH-53E to try to dislodge the nosegear.

The pilots held the helicopter's nose off the deck, and GySgt. Zamora, Sgt. Shaw, and LCpl. Leal ran beneath the aircraft and pried the nosegear loose with bars. The crew then landed safely and shut down.

An inspection revealed that the nosegear hung up because the A-frame bracket, which connects to the gear door, had failed. The broken A-frame had jammed the door shut, preventing the gear to cycle down. ◄

Lt. Paul Averna
Lt. Brian Pace
VF-143

While practicing a guns defense, Lt. Averna (pilot) tried to create an overshoot using coordinated full left stick and full left rudder. The F-14B rolled correctly, but when Lt. Averna tried to recenter the stick, it was jammed in the full left position.

Telling his RIO of the problem, the pilot brought both throttles back to idle, and used both hands to try to free the stick.

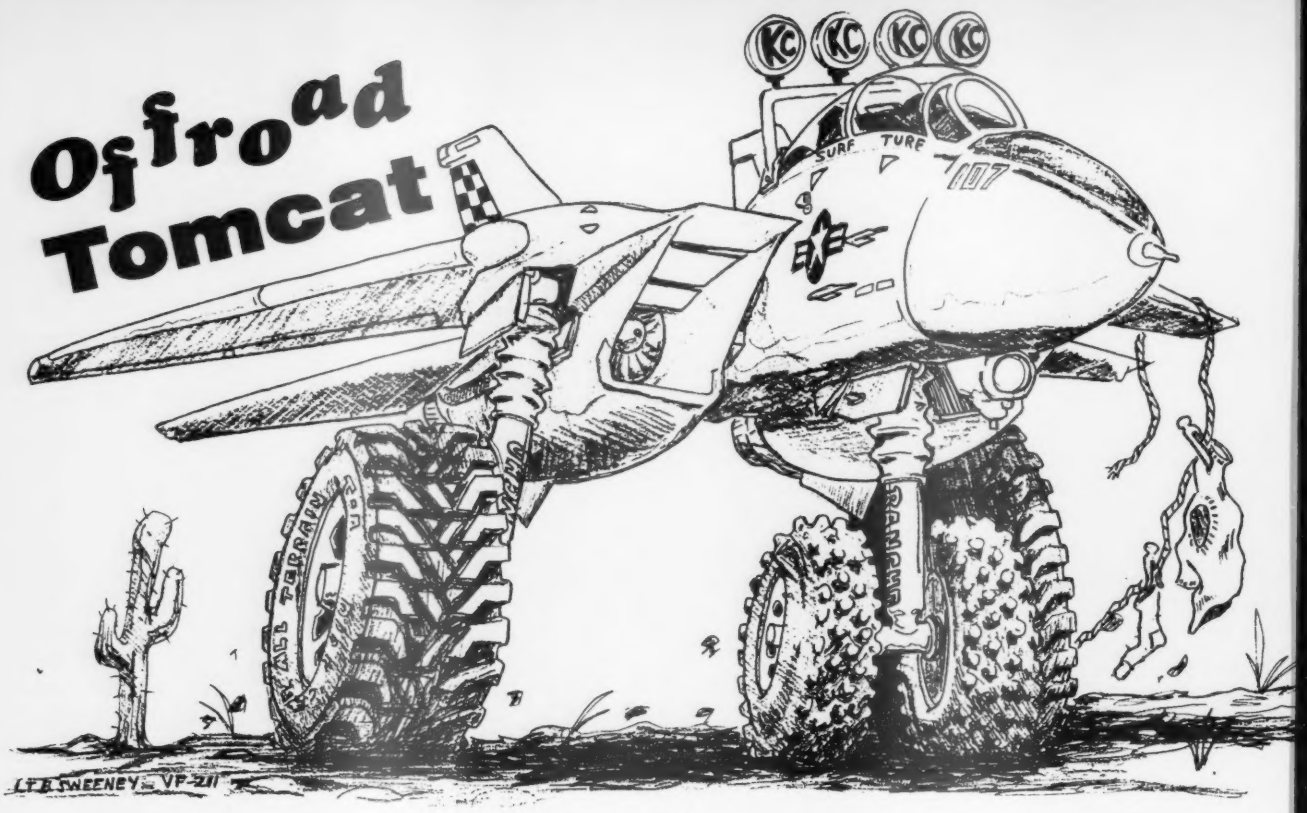
The flight lead saw his wingman's continuous left roll toward the deck and called, "Knock it off." However, the Tomcat continued rolling through three revolutions, 15 degrees nose low. Lt. Pace (RIO) called out airspeed and altitude as Lt. Averna countered the roll with opposite rudder. He was finally able to free the stick.

Lt. Averna and Lt. Pace slow-flighted their aircraft and returned to their carrier for an OK 3-wire.

Postflight inspection revealed that a new wire had been routed over a lateral-control pushrod assembly. This wire eventually kept the stick from moving left-to-right. Lt. Averna was able to break the wire and free the jammed control stick. ◄

Left to right: Lt. Pace, Lt. Averna

Offroad Tomcat



By Lt. Tim O'Brien

On the schedule, it looked like one of the least eventful hops we could have flown. We were to fly over the hill, show the LSOs a few low passes at El Centro, and make it home in time for "The Simpsons." Unfortunately, the plan fell apart at the end, somewhere near the 4-board.

We launched as scheduled and made our way to El Centro. We maintained a 500-foot bubble with the flight of six Marine Hornets in the pattern. After flying half a dozen passes, we were RTB.

Life was normal until we touched down back at Miramar: no spoilers. Not a big deal. There was a spoiler gripe in the book. I selected spoiler brake instead of the normal "both" position (spoiler brake and anti-skid), and the spoilers deployed normally. We slowed down, and I began to clean up the aircraft before turning off the runway.

As we completed about 45 degrees of turn onto the taxiway (less adventurous pilots usually choose about 50 degrees), we lost all brakes and steering. While I stomped on the brakes, kicked the rudder pedals and cycled the anti-skid-spoiler brake switch, my RIO asked repeatedly, and with growing curiosity, where we were going.

After a close right-to-right pass with the 4-board, we veered left. We made it back onto the runway, except for the right mainmount, which stuck at the edge of the runway and swung us back to the right. We stopped with all the tires in the dirt.

"Tower, Nickel 107 is off the runway."

"Roger 107, cleared to the octagon."

"Uh, no, we're actually *off* the runway."

"Understand you're off the runway?"

"That's affirm."

"How much of your jet is off the runway?"

"Pretty much all of the big grey pieces."

We had a short but similar conversation with base, shut down and waited for the tow tractor.

Losing the brakes at taxi speed is understandable if the anti-skid-spoiler brake switch is in the wrong position. When I cleaned up the jet, I didn't have the switch in the normal position; instead of going to off, I inadvertently selected both. Loss of brakes below 15 knots with anti-skid selected is well documented in NATOPS. When things started going wrong, I fixated on the anti-skid and stopping the jet instead of selecting nosewheel steering. Fortunately, there was no damage to the jet. The only consequences of our excursion are that I now take a second look at switch positions, I roll out all the way to the 2-board, and I was asked to write this article. ◀

Lt O'Brien flies F-14As with VF-211.

Adapt and Overcome

By Lt. A.J. Wegman

It isn't often that you get to see your fellow pilots put into a unique position from the vantage point of ATC. On a detachment to Texas, our squadron tasking required that two aircraft launch on a quiet Saturday morning. The aircraft launched with CAVU, current and forecast, on a three-hour mission. In typical southeast-Texas winter weather, within minutes after launch, the field and op area were socked in with fog, almost to zero-zero. The ops boss and CO happened to be in the hangar as the weather rolled in from the gulf.

After a thorough discussion, the two crews got 45 minutes to shoot GCAs before they would have to divert to an AFB. Weather was now saying that the fog probably wouldn't burn off until the next day.

Because the tower was located in the same hangar, the ops boss and I decided to listen and watch as our squadronmates tried to recover. The fog was bad enough at this time that we couldn't see our aircraft parked less than 300 yards from the tower. Also, A-4s trying to recover were diverting left and right to various airfields.

After shooting two GCAs, our two aircraft were preparing to divert when holes in the fog began to appear. Because of the prevailing wind, the holes would move from the departure end to the approach end of the runway, proving to be very convenient. Seeing this, the tower controllers began calling the GCA controllers to sequence the beginning of the approach to end when one of these holes arrived at the end the runway.

The entire event began to feel like we were watching our favorite sports team defeat its arch rival. An aircraft would start its approach with zero-zero on the runway, and the controllers would speed up or slow down the aircraft to get it to touch down just as the hole arrived.

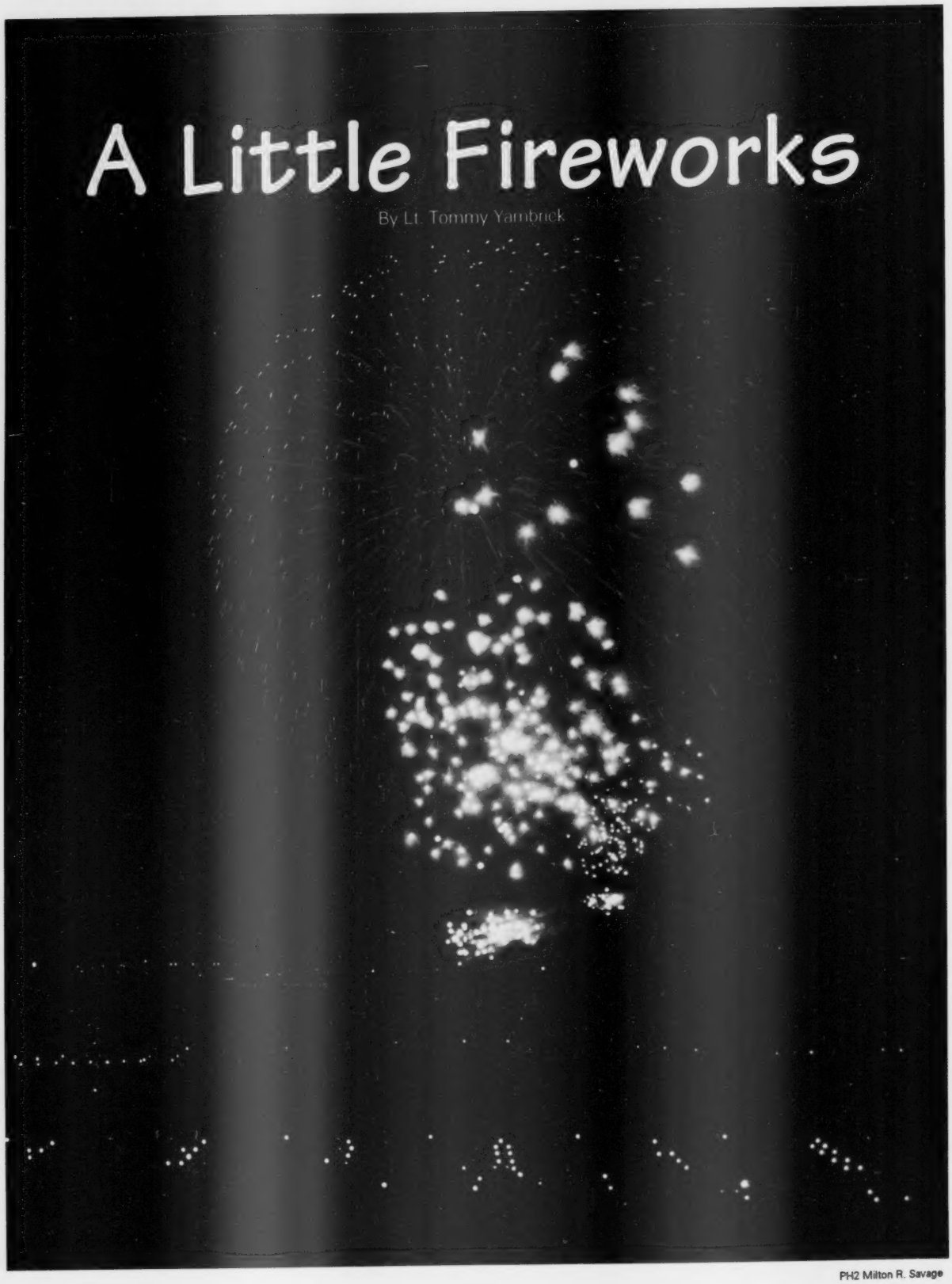
Amazingly, the technique worked. It did take a few tries to perfect the system, but both aircraft recovered safely. As a footnote, when each aircraft recovered, the fog would again settle in bad enough so that the aircraft couldn't safely follow the follow-me truck to the hangar. This truly is a story where not only naval aviators, but also Navy controllers, adapted and overcame the elements.

The important lesson is that when the elements begin closing in upon you, it is better to be in the tower than in the aircraft. One other lesson is that it is best to be skeptical of weather forecasts when flying in new areas. ◀

Lt. Wegman flies with HM-14.

A Little Fireworks

By Lt. Tommy Yambrick



PH2 Milton R. Savage

Lt. Joseph E. Higgins

Midway through deployment, as routine and boredom set in, my pilot and I flew a practice bombing sortie. After returning from the range, we steered to the overhead for a few practice plugs. As had been usual for this post-war Arabian Gulf cruise, visibility in the "pond" was heinous because of Kuwait's burning oil fields and the usual haze.

The plugs went 4.0, and we were soon positioned on the starboard side of the "tanker king," waiting for the package to stow.

At this point, my pilot commented, "I bet things are boring for those guys in the tanker today."

"Yeah," I agreed, "we ought to liven it up for them."

As we got the kiss-off signal, my pilot immediately pulled the Intruder hard to the right and continued into a diving aileron roll. As we bottomed out and proceeded to marshal, we were sure that we had given the tanker crew some fireworks to enjoy.

Back in the ready room, we found that the real fireworks were just beginning. We strutted in, expecting the tanker crew to praise our most excellent aerial demonstration. Much to our amazement, we were treated to a little "criticism" from the tanker BN, who didn't appreciate our behavior in his pattern.

The BN was very accurate in his description of our performance, as he described all of the safety rules we had violated in our quest for a little fun. His objections were all valid: visibility had been poor, there had been heavy traffic in the overhead, and we'd been unpredictable in the tanker pattern. My skin turned clammy as I thought about these factors, combined with a poor lookout.

The thing that really scared me was that the maneuver had been totally unbriefed. Though I had been expecting to do something to liven up the day, I'd no idea what my pilot had in mind. I'd no chance to clear the aircraft's flight path to the right. We could have easily had a fatal mishap.

With this sobering up provided by the tanker's BN, my pilot and I took the opportunity to discuss our antics. Again, my concern was that I had been caught off guard, though I had been just as anxious to do something stupid.

As is usually the case, things snowballed into a little chat with the skipper, who most graciously chewed off the remaining flesh on our behinds. He first reminded my pilot and me that we weren't out here to have fun at the expense of safety. During our "discussion," the CO commented that the satisfaction of doing a job right, being prepared for war, and coming home alive should be enough excitement in the air. ◄

Lt. Yambrick flew with VA-95. He is currently assigned to VX-5.

"OK, How Do You Do That?"

By Lt. Jim Nichols

Nate Leong

We had time for a fly-by, but what if...?

A perfect day, not a cloud visible, and I was all set for my second TARPS syllabus hop. It was scheduled to be a low-level through the mountains of West Virginia, about the best route one could hope for on the East Coast.

My RIO, who was an FRS instructor, and I manned up after a thorough brief and a cursory look at the divert chart. Shortly after takeoff, we had a wingsweep advisory light, jumping wings and a flycatcher that showed a mismatch between actual and commanded wing position. We've all seen it, and as long as the wings were working correctly, we decided to press.

We had just canceled IFR passing 10K, and my RIO was switching to FSS.

"Elkins Radio, we're going home," I interrupted, as the stick jumped and the combined pressure dropped. A hydraulic light and master-caution light soon followed.

Turning toward home, I looked for signs of fire and got the wings full forward. I should have also stowed the affected ramp and, if we had been at the boat, extended the probe. Though not boldface, these items are critical to making recovery possible, especially at the boat.

My RIO did a great job immediately switching back to Center, declaring an emergency and telling them we were headed to Oceana.

"Elkins, stand by...what was that?" he said to me.

"I have a left ramp light, combined pressure is still above 2,100, so I'm stowing the ramp."

"Roger," he replied, as he broke out the NATOPS and read the procedure.

We were 200 miles from Oceana. After four minutes, it became obvious that the combined pressure was going to zero as the Bi-Di started cavitating, so I secured it. Pressure hung at 1,200-1,500 for four more minutes and finally fell to zero. We were 120 miles from home, with the necessary procedures complete and great cooperation from Center when our plans changed. We had vibrations in the stick and rudders, and fluctuating flight hydraulics. It was time to break out the divert chart. Richmond International had arresting gear.

"Center, we are going to Richmond for an arrested landing," my RIO called.

It had taken flight-side fluctuations to make us decide to execute step 13 ("make an arrested landing as soon as possible"). We should have been going to Richmond all along.

As we approached the field, it was time to dirty up. The first thing we did was lower the hook. I read the placard and pulled the hook handle. I never saw a transition light and the handle would not move down. I was confused and worried.

Uncertain whether the hook was down, I tried the gear. Again, I looked at the placard and said, "OK, how do you do that?"

I had my RIO read the procedures to make sure I was doing the steps correctly. We asked for a fly-by to determine whether the hook was down. As we came around to land after confirmation from Tower, we decided to take it around if we hooked-skipped. We trapped and rolled out, but at the end of the runout, we started to roll back. I used the remaining brakes to stop the aircraft, but I should have used them to slow us down and prevent rollback.

During an emergency, it's too late to figure out that no matter what position the hook handle is in when emergency-extended, the mechanical uplink is released and the hook falls. We had time for a fly-by, but what if... ? Learn or review the following procedures.

For instance, how many times have you pinned the gear? If we don't know how, how can we expect some stranger at another field to do it?

After shutdown, we discovered the aircraft had suffered a lower-wingsweep swivel failure, and the combined-side fluid was completely depleted. The combined pump was also ruined from the heat it generated.

In retrospect, the procedure that almost bit us (and the one that most of you probably know) was fuel weight. We failed to dump until 15 miles from the field. We held the gear to save fuel, but fuel wasn't directly addressed in the procedure. A good catch by my RIO gave us more valuable flight time. ◀

Lt. Nichols flies with VF-103.

Total combined-hydraulic failures are certainly not new to the F-14, but this incident brings out several points. All F-14 hydraulic malfunctions have the all-too-real chance of becoming total hydraulic failures and should be treated as such. Nearly every emergency in the PCL ends with either "Land as soon as possible," or "Land as soon as practicable." These steps are not optional. Your preflight briefing should cover any and all potential diverts.

The rash of recent wingsweep failures should make us a little more aware of the potential of stuck-aft wingsweep landings. Until we can install more reliable components for wingsweep motors, squadrons may want to promote a conservative approach in evaluating indications of wingsweep malfunction.—LCdr. Marty Ledger, F-14 analyst, Naval Safety Center.

LETTERS

Re: "Fishtailing Without a Hook" (Feb '94)

NAS Kingsville – A similar incident happened in my squadron. This time, ECMO 1 pulled the hook while the pilot had a boot-full of rudder in, which caused the pilot to lose control. We ended up doing several 360s on the runway. To add insult to injury, the long-field gear had been derigged.

The aircraft was not damaged, except for flat tires, and no one was hurt. But it was a good example of poor crew coordination.

My crew briefed that if ECMO 1 felt we needed the hook, he should put his hand on the handle and ask the pilot if he wanted it, giving him a chance to center the rudder before the ECMO pulled the handle.

Remember, if there's any doubt, ask the guy who's driving the plane!

Lt. Eric Mitchell
Strike Instructor Training School

Re: "Is There an I in Team?" (Feb '94)

NAS Norfolk – Either this author never attended aircrew coordination training (ACT), or he slept through it. The only reason that a pilot in a multi-crew aircraft would act like he was in a single-seater would be to feed his ego. To reduce the crew's capability by 50 percent by not using the other crew member is criminal.

Any time the pilot at the controls has to focus unnecessarily on something not related to the task at hand, mission effectiveness will suffer.

I am constantly challenged to break the single-pilot attitude that the instructional environment instills in our nuggets. I served as an instructor in the training command, and I understand the value of this type of training. However, this method is for evaluation purposes and should never be endorsed as an effective way to operate a multi-crew aircraft. This is why I was so dismayed to see the lead article in *Approach* (albeit as an editorial), which presumably endorses this concept (especially when it was written by a pilot at TPS).

I can't guess how many times I have criticized pilots for not using their copilots effectively. For example, why do new pilots believe they have to review the approach plate and brief the approach while they are at the controls in IMC? Why does the pilot at the controls think he has to manipulate every switch no matter what its function is?

I do agree with the author that cross-checking is essential. (Sounds like good crew coordination.)

In our squadron, the ACT–endorsed call method is SOP. (First call notes problem and situation, second call again notes problem-situation, with recommended corrections, third call transfers control of the aircraft –"I've got it!")

Granted, this requires two sets of controls, but the intent and philosophy is true for any multi-crew aircraft.

Let's not take a giant step backward and put an "I" in Team. Let's leave the "I" with the Neanderthals who believe that a second set of eyes and another brain are 200 pounds of wasted gas.

Cdr. R.W. Hamilton
Commanding Officer
VRC-40

Re: "Red Means Stop...and Think" (Feb '94)

MCAS Yuma – After saying "Sound judgment and intentional violation of NATOPS are mutually exclusive," the Safety Center analyst chastises the crew for not securing a perfectly good engine on a "dark and stormy Case III final." I would like to point out that *we weren't there.*

As naval aviators, we are the biggest bunch of Monday-morning quarterbacks on the planet. Some in our ranks have no qualms about second-guessing God. This propensity to dissect every decision by fellow pilots is healthy, and it promotes discussions and awareness. It also prompts people to slink away and stick their noses in the Big Blue Sleeping Pill.

We can only assume that the aircrew in this article did not "John Wayne" it. We must trust that they used aircrew coordination to arrive at an intelligent, logical decision based on the information at hand.

The analyst wrote, "Go against NATOPS and pull it off, and you may be a hero. If you're wrong, you may be hanging in your chute (if you're lucky)..." This is not a contest to see who can get away with violating NATOPS the worst. We make life-and-death decisions based on our knowledge and experience, and sometimes (if we're smart), the experiences of others (community gouge). NATOPS is just one of the inputs to this process.

The AV-8B NATOPS begins with the point that NATOPS is not a substitute for sound judgment. This aircrew could just as easily have followed their NATOPS procedures, secured the engine, and flown a single-engine, actual Case III to a ramp strike because of insufficient power to wave off from a poor approach.

Do we have a problem with our pilot-error mishap rate? Absolutely. But slamming guys who make the right decision and act on it is not the answer. They accurately evaluated their aircraft's status and landed safely. You can't ask for anything better than that. The worst you can say is, "I wouldn't have done it that way."

Capt. P.E. Madden, USMC
VMA-311

Arlington, VA – I'm concerned with the analyst's note, specifically, "Prudence and sound judgment would have dictated shutting down the engine – following NATOPS." Lt. Wilfong wrote that he had called, "Platform," had 24 feet of deck pitch, and absolutely rotten weather. He had no secondaries, and a back-end crew who didn't see flames or discoloration. He got a $90 million aircraft and five souls

safely back aboard after a conscientious decision, only to have the analyst tell him that he did not exercise prudence and sound judgment.

As a retired aviation LDO, with five carrier assignments and a VAW tour, I've seen more faulty "kiddee" elements, because of shorts from water, chafing, or bleed air than actual fires. In this situation, with no secondaries, and no visual indication of problems, I think that the young lieutenant made the right call.

When a person cares enough to write such an article, he doesn't deserve the type of public slam the analyst provided.

LCdr. Dennis M. Eberhart, USN (Ret)

NAS New Orleans – The author had a fire-warning light, pitching deck, gusting winds, blowing rain and low visibility. After considering everything, he decided to leave the affected engine running and make a two-engine recovery.

The Safety Center analyst's response was that sound judgment and intentional violation of NATOPS are mutually exclusive. If that's true, we must assume that NATOPS covers all possible contingencies and considers all outside factors we may encounter on every flight. We all know that's not true. The opening paragraph of every NATOPS addresses this very issue.

The analyst's position is that we are all non-thinking robots, who have no other option but to follow NATOPS or violate its procedures, and be guilty of bad headwork.

Lt. Wilfong troubleshot his emergency, *verified* no secondaries, and because of bad weather, decided not to shut down the engine. I fully support his decision. If I were in the same situation, I would do as he did.

Headwork, common sense, sound judgment, and an open mind are just as important as a thorough knowledge of NATOPS. We can't shield and stunt these attributes behind some mystical all-knowing manual. They go hand in hand.

If you guys won't say it, I will. "Bravo Zulu, Lt. Wilfong!"

Cdr. M.G. King
FLTLOGSUPWING
Det New Orleans

NAS Norfolk – Unfortunately, the author of this article is too busy patting himself on the back for winning this round of NATOPS "Russian Roulette" to realize just how bad a decision he made. Anyone who talks to an aircrew that has had an engine fire in the E-2 quickly concludes that there may be no secondary indications until the engine is engulfed in flames. There is no choice with an engine-fire light except for shutdown.

This author also makes it sound like he had no other option other than to recover back aboard ship. Was there no divert field available? I don't know of any CAG or carrier CO who would launch the air wing into weather without a viable divert field. At the point where the light came on, he probably had enough fuel for a single-engine bingo of around 200 miles. Even if the ship was the only option, we've trained from day one in the Hawkeye to make a successful single-engine landing. Granted, it would not be a simple landing, but it certainly would not be impossible.

As far as I am concerned, I'd rather fly that rainy night, pitching-deck approach than take a chance on taking that rainy night ride at the end of the SAR helo's hoist.

I'll stick with NATOPS.

LCdr. C.L. Aley
Safety Officer
VAW-120

Approach welcomes letters from its readers. All letters should be signed though names will be withheld on request. Address: *Approach* Editor, Naval Safety Center, 375 A Street, Norfolk, VA 23511-4399. Views expressed are those of the writers and do not imply endorsement by the Naval Safety Center.

Vultures' Row

This list includes Flight, Flight-Related and Ground Class A Mishaps during FY-94.
Classifications and descriptions are subject to change.

DATE	AIRCRAFT	COMMAND	DAY; NIGHT	FATAL	FLIGHT REGIME; LOCATION
7 Oct	UH-1N	HMM-163	N	1	Takeoff; at sea
14 Oct	UH-1N	HMM-268	N	0	Towing, aircraft fell overboard (AGM); at sea
15 Oct	AV-8B	VMA-231	D	0	Birdstrike during low-level; Raleigh, NC
29 Oct	F/A-18D	VFA-106	D	0	Aborted takeoff; Whiting Field, FL
18 Nov	F-14A	VF-84	D	0	Training flight; Currituck Sound, NC
17 Dec	F/A-18A	VMFA-115	D	1	Air-to-air intercept; at sea
10 Jan	HH-46D	HC-6	N	3	Amphibious SAR support; at sea
12 Feb	F-14, F/A-18	VF-103, VFA-81	D	0	Midair (not same flight)
17 Feb	T-2C	VT-23	D	0	Midair during formation training flight
18 Feb	HH-46D	HC-6	N	0	Controlled ditching at sea
22 Feb	F-14D	VF-11	D	0	Crashed at sea
8 Mar	EA-6B	VMAQ-3	D	0	During FCLPs, aircraft hit ground. Possible bird ingestion
12 Mar	CH-53D	HMH-363	D	1	Hit trees/ground after takeoff
5 Apr	A-6E	VA-304	D	2	Hit water following break for FCLP pattern
6 Apr	CH-46E	HMM-262	D	0	Aircraft pylon separated during landing transition